

CLAIMS

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- The chemical structure shows a tetracyclic system consisting of a benzene ring fused to a six-membered ring, which is further fused to a bicyclic system containing a nitrogen atom. The nitrogen atom is substituted with R^1 . The benzene ring has substituents R^3 and R^7 . The six-membered ring has substituents R^6 and R^8 . The bicyclic system has a substituent R^2 and a group $A-B-R^5$ attached to one of the rings.

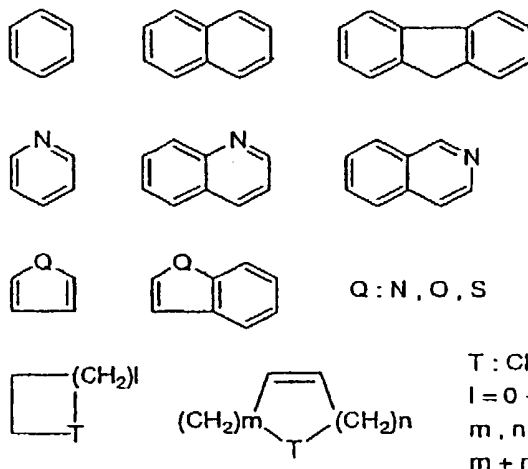
(1)

wherein ... represents a double bond or a single bond; R¹ represents an alkyl group having 1 to 5 carbon atoms, a cycloalkylalkyl group having 4 to 7 carbon atoms, a cycloalkenylalkyl group having 5 to 7 carbon atoms, an aryl group having 6 to 12 carbon atoms, an aralkyl group having 7 to 13 carbon atoms, an alkenyl group having 4 to 7 carbon atoms, an allyl group, a furan-2-yl-alkyl group having 1 to 5 carbon atoms, or a thiophene-2-yl-alkyl group having 1 to 5 carbon atoms; R² represents hydrogen, a hydroxy group, a nitro group, an alkanoyloxy group having 1 to 5 carbon atoms, an alkoxy group having 1 to 5 carbon atoms, an alkyl group having 1 to 5 carbon atoms, or -NR⁹R¹⁰; R⁹ represents hydrogen or an alkyl group having 1 to 5 carbon atoms; R¹⁰ represents hydrogen, an alkyl group having 1 to 5 carbon atoms, or -C(=O)R¹¹; R¹¹ represents hydrogen, a phenyl group, or an alkyl group having 1 to 5 carbon atoms;

R^3 represents hydrogen, a hydroxy group, an alkanoyloxy group having 1 to 5 carbon atoms, or an alkoxy group having 1 to 5 carbon atoms; A represents $-XC(=Y)-$, $-XC(=Y)Z-$, $-X-$, or $-XSO_2-$ (where each of X, Y, and Z independently represents NR^4 , S, or O; R^4 represents hydrogen, a straight or branched alkyl group having 1 to 5 carbon atoms, or an aryl group having 6 to 12 carbon atoms; and each R^4 may be identical or different); B represents a valence bond, a straight or branched alkylene group having 1 to 14 carbon atoms (which may have at least one substituent selected from the group consisting of an alkoxy group having 1 to 5 carbon atoms, an alkanoyloxy group having 1 to 5 carbon atoms, a hydroxy group, fluoro, chloro, bromo, iodo, an amino group, a nitro group, a cyano group, a trifluoromethyl group, and a phenoxy group, where one to three methylene groups may be replaced with carbonyl groups), a straight or branched acyclic unsaturated hydrocarbon containing one to three double bonds and/or triple bonds and having 2 to 14 carbon atoms (which may have at least one substituent selected from the group consisting of an alkoxy group having 1 to 5 carbon atoms, an alkanoyloxy group having 1 to 5 carbon atoms, a hydroxy group, fluoro, chloro, bromo, iodo, an amino group, a nitro group, a cyano group, a trifluoromethyl group, and a phenoxy group, where one to three methylene groups may be replaced with carbonyl groups), or a straight or branched saturated or unsaturated hydrocarbon containing one to five thioether bonds, ether bonds, and/or amino bonds and having 1 to 14 carbon atoms (where any hetero atom is not directly bonded to A, and one to three methylene groups may be replaced with carbonyl groups); R^5 represents

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hydrogen or an organic group having a basic skeleton selected from the group consisting of the following formulae:

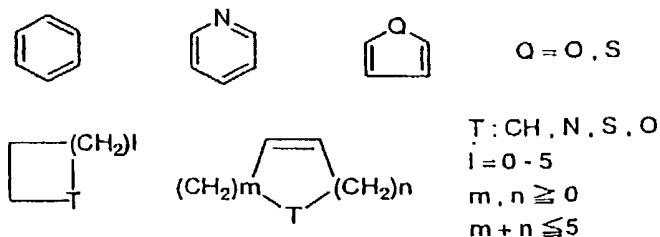


ORGANIC GROUPS REPRESENTED BY R⁵

(where the organic group may have at least one substituent selected from the group consisting of an alkyl group having 1 to 5 carbon atoms, an alkoxy group having 1 to 5 carbon atoms, an alkanoyloxy group having 1 to 5 carbon atoms, a hydroxy group, fluoro, chloro, bromo, iodo, an amino group, a nitro group, a cyano group, an isothiocyanate group, a trifluoromethyl group, a trifluoromethoxy group, and a methylenedioxy group); R⁶ represents hydrogen; R⁷ represents hydrogen, a hydroxy group, an alkoxy group having 1 to 5 carbon atoms, or an alkanoyloxy group having 1 to 5 carbon atoms, or R⁶ and R⁷ together forming -O-, -CH₂-, or -S-; and R⁸ is hydrogen; an alkyl group having 1 to 5 carbon atoms, or an alkanoyl group having 1 to 5 carbon atoms.

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2. A therapeutic agent for neuropathic pain according to Claim 1,
 wherein, in general formula (I), R^1 is an alkyl group having 1 to 5 carbon atoms, a cycloalkylmethyl group having 4 to 7 carbon atoms, a cycloalkenylmethyl group having 5 to 7 carbon atoms, a phenylalkyl group having 7 to 13 carbon atoms, an alkenyl group having 4 to 7 carbon atoms, an allyl group, a furan-2-yl-alkyl group having 1 to 5 carbon atoms, or a thiophene-2-yl-alkyl group having 1 to 5 carbon atoms; R^2 is hydrogen, a hydroxy group, an alkanoyloxy group having 1 to 5 carbon atoms, or an alkoxy group having 1 to 5 carbon atoms; R^3 has the same definition as Claim 1; A is $-XC(=Y)-$ (where X represents NR^4 , S, or O; Y represents O; and R^4 represents hydrogen or an alkyl group having 1 to 5 carbon atoms), $-XC(=Y)Z-$, $-X-$, or $-XSO_2-$ (where X represents NR^4 ; Y represents O or S; Z represents NR^4 or O; and R^4 represents hydrogen or an alkyl group having 1 to 5 carbon atoms); B is $-(CH_2)_n-$ ($n = 0$ to 10), $-(CH_2)_n-C(=O)-$ ($n = 1$ to 4), $-CH=CH-(CH_2)_n-$ ($n = 0$ to 4), $-C\equiv C-(CH_2)_n-$ ($n = 0$ to 4), $-CH_2-O-$, $-CH_2-S-$, $-(CH_2)_2-O-CH_2-$, or $-CH=CH-CH=CH-(CH_2)_n-$ ($n = 0$ to 4); R^5 is hydrogen or an organic group having a basic skeleton selected from the group consisting of the following formulae:

ORGANIC GROUPS REPRESENTED BY R^5

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(where the organic group may have at least one substituent selected from the group consisting of an alkyl group having 1 to 5 carbon atoms, an alkoxy group having 1 to 5 carbon atoms, an alkanoyloxy group having 1 to 5 carbon atoms, a hydroxy group, fluoro, chloro, bromo, iodo, an amino group, a nitro group, a cyano group, an isothiocyanate group, a trifluoromethyl group, a trifluoromethoxy group, and a methylenedioxy group); R^6 and R^7 together form $-O-$; and R^8 is hydrogen.

3. A therapeutic agent for neuropathic pain according to Claim 1, wherein, in general formula (I), R^1 is a methyl, ethyl, propyl, butyl, isobutyl, cyclopropylmethyl, allyl, benzyl, phenethyl, furan-2-yl-methyl, or thiophene-2-yl-methyl group; R^2 is hydrogen, a hydroxy group, or an acetoxy group; R^3 is a hydroxy, acetoxy, or methoxy group; A is $-XC(=Y)-$ or $-XC(=Y)Z-$ (where X represents NR^4 ; Y represents O; Z represents NR^4 or O, and R^4 represents an alkyl group having 1 to 5 carbon atoms); B is $-(CH_2)_n-$ ($n = 1$ to 3), $-CH=CH-(CH_2)_n-$ ($n = 0$ to 4), $-C\equiv C-(CH_2)_n-$ ($n = 0$ to 4), $-CH_2-O-$, or $-CH_2-S-$; R^5 is hydrogen or an organic group having a basic skeleton selected from the group consisting of the following formulae:



Q:O.S

ORGANIC GROUPS REPRESENTED BY R^5

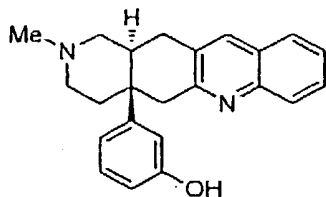
(where the organic group may have at least one substituent selected from the group consisting of an alkyl group having 1 to 5 carbon atoms, an

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alkoxy group having 1 to 5 carbon atoms, an alkanoyloxy group having 1 to 5 carbon atoms, a hydroxy group, fluoro, chloro, bromo, iodo, an amino group, a nitro group, a cyano group, an isothiocyanate group, a trifluoromethyl group, a trifluoromethoxy group, and a methylenedioxy group); R^6 and R^7 together form -O-; and R^8 is hydrogen.

4. (Amended) A therapeutic agent for neuropathic pain according to Claim 1, wherein said neuropathic pain is pain associated with herpes zoster.

5. A neuropathic pain animal model in which pain reaction is generated by intrathecally administering (+)-4a-(3-hydroxyphenyl)-2-methyl-1,2,3,4,4a,5,12,12a-octahydro-trans-quinolino[2,3-g]isoquinoline



to a mouse.

6. A method for evaluating a compound for alleviating neuropathic pain in which a neuropathic pain animal model according to Claim 5 is used.

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7. A compound obtained by an evaluation method according to Claim 6.

Kindly add the following new claims 8 and 9:

8. (New) A therapeutic agent for neuropathic pain according to Claim 2, wherein said neuropathic pain is pain associated with herpes zoster.

9. (New) A therapeutic agent for neuropathic pain according to Claim 3, wherein